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Hallman et al.

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(54) **MASKED PRESENSITIZED PRINTING  
PLATE INTERMEDIATES AND METHOD OF  
IMAGING SAME**

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(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/709,128**

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#### Related U.S. Application Data

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1997, now Pat. No. 6,187,380, which is a continuation-in-  
part of application No. 08/565,288, filed on Nov. 30, 1995,  
now Pat. No. 5,820,932.

(51) Int. Cl.<sup>7</sup> ..... **G03F 7/11**; G03F 7/16;  
G03F 7/20

(52) U.S. Cl. .... **430/302**; 430/273.1

(58) Field of Search ..... 430/302, 273.1

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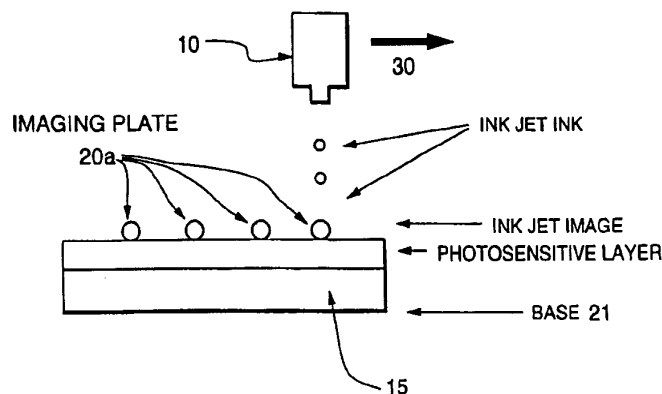
Primary Examiner—Cynthia Hamilton

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(57) **ABSTRACT**

A method for forming an image on a printing plate inter-  
mediate having a radiation transparent removable coating  
layer is disclosed. An image mask, opaque to ultraviolet  
radiation, is applied to the coating layer with an ink jet  
system. After the plate intermediate is exposed with ultra-  
violet radiation, the image mask and coating layer are  
removed, and plate intermediate developed.

21 Claims, 5 Drawing Sheets



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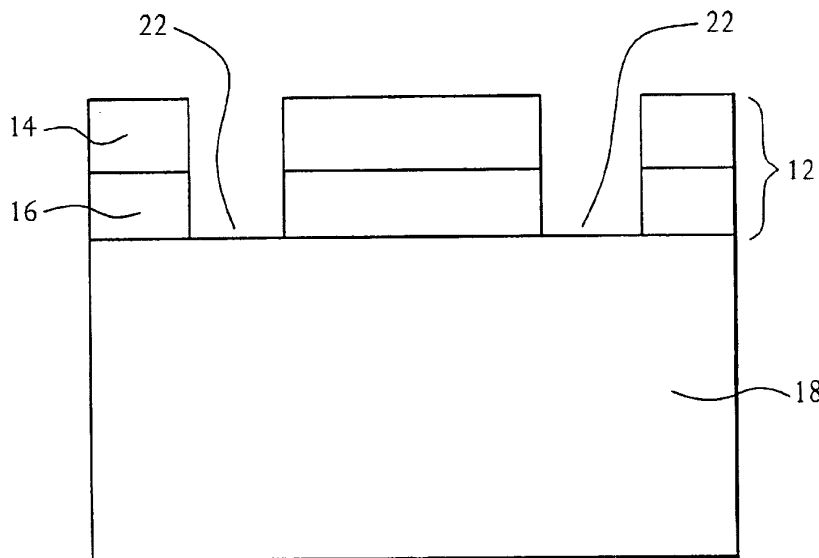
US006367381B1

(12) **United States Patent**  
**Kanga**(10) **Patent No.: US 6,367,381 B1**  
(45) **Date of Patent: Apr. 9, 2002**(54) **LASER IMAGED PRINTING PLATES**  
**COMPRISING A MULTI-LAYER SLIP FILM**5,925,500 A \* 7/1999 Yang et al. .... 430/300  
6,020,108 A \* 2/2000 Goffing et al. .... 430/306**FOREIGN PATENT DOCUMENTS**(75) **Inventor: Rustom Sam Kanga, Marietta, GA**  
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EP 0 687 570 A1 12/1995(73) **Assignee: Polyfibrion Technologies, Inc., Atlanta,**  
**GA (US)**(\*) **Notice:** Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

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*Primary Examiner*—Stephen R. Funk(74) *Attorney, Agent, or Firm*—Woodcock Washburn LLP(21) **Appl. No.: 09/507,840**(22) **Filed: Feb. 22, 2000**(51) **Int. Cl.<sup>7</sup> ..... G03C 1/815; G03F 7/11**(52) **U.S. Cl. .... 101/395; 101/456; 430/273.1;**  
**430/302; 430/306; 430/327**(58) **Field of Search ..... 430/5, 271.1, 273.1,**  
**430/302, 306, 309, 327, 328; 101/456,**  
**467, 395, 401.1**(56) **References Cited****U.S. PATENT DOCUMENTS**5,262,275 A \* 11/1993 Fan ..... 430/306  
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5,649,486 A \* 7/1997 Lewis ..... 101/453  
5,719,009 A \* 2/1998 Fan ..... 430/306  
5,821,028 A \* 10/1998 Maejima et al. .... 430/201**(57) ABSTRACT**

The present invention provides a method of making a laser imaged printing plate. First, a solid, uncured printing plate is modified with both a UV absorber and an IR absorber. This is most conveniently done by constructing a multilayer slip film comprising at least two layers wherein at least one layer comprises a strong UV absorber, and wherein at least one other layer comprises an IR absorber having high absorptivity. The multilayer slip film is already adapted for use with a printing plate and is applied in the usual fashion to the surface of the uncured printing plate. The printing plate with the multilayer slip film can be stored for a time, or used immediately, as the printer's needs dictate. In use, the multilayer slip film is ablated from the photopolymer using an IR laser operating at a selected wavelength to create an in situ negative. The resulting negative can be subjected to typical UV flood exposure and development.

**19 Claims, 2 Drawing Sheets**

MICHEL G. FAGAN, OF TROY, NEW YORK, ASSIGNOR TO HIMSELF  
AND ALBERT G. CORSE, OF SAME PLACE.

Letters Patent No. 112,233, dated February 28, 1871.

## IMPROVEMENT IN HEATING APPARATUS.

Be it known that J. MICHAEL G. FARGAR, of Troy, in the county of Rensselaer and in the State of New York, have invented certain new and useful Improvements in Heating Apparatus; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

As is commonly known, the cylindrical container is composed of sheet-iron cylinders enclosed at either end by cast-iron plates resting upon or against the same, and the whole is fastened together by means of a bolt passing through both plates and the cylinder, and forming the latter between the former.

This is, however, open to serious objections—

—are, among which—

1. The impossibility of making a joint between the plates and the cylinder.

In the annexed drawing—  
A and B represent the outer and inner cylinders, respectively, of a drum, corresponding in length and arranged concentrically.  
Secured to and around the upper end of the outer cylinder A is a cast-metal ring, C, the outer edge of which coincides with that of said cylinder, from whence it extends downward upon the same to a sufficient distance to permit of the insertion of nuts, or other equivalent devices, by means of which said parts are attached together.  
From its upper edge the ring C extends horizontally outward and then vertically upward, so as to

The Schedule referred to in these Letters Patent and making part of the same.